

Has the rapidly expanding invasive dwarf eelgrass *Zostera japonica* in Yaquina estuary, Oregon impacted the distribution of native eelgrass *Zostera marina* – a critical intertidal habitat?

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ABSTRACT

Native eelgrass, *Zostera marina*, occupies a significant portion of marine-dominated intertidal and near-subtidal sectors of many coastal estuaries. In recent decades an invasive congener, *Z. japonica*, has become established in many Pacific Northwest estuaries. We measured the horizontal and vertical distributions of intertidal native and invasive eelgrass between 1997 and 2007 in Yaquina estuary using color-infrared aerial photography and digital classification to assess the impact, if any, of *Z. japonica* on *Z. marina*'s distribution. A bathymetric model was used to characterize the distribution of *Z. marina* and *Z. japonica* with intertidal elevation. Relative to Mean Lower Low Water, peak abundances of *Z. marina* and *Z. japonica* occurred at about 0.0 m and 1.5 m, respectively. Moreover, the two species seldom occupied the same bathymetric zone of a tidal flat. Although the areal extent of *Z. japonica* increased exponentially, and it now occupies a similar percentage of the intertidal zone as *Z. marina*, there has been no significant change in the areal extent of *Z. marina* over the study period.